Arizona Vaccine News
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INFLUENZA VACCINE NEWS

Influenza Vaccine Coverage in Health Care Providers

- During the **2010-2011** influenza season**, 63.5%** of HCP in the United States received seasonal influenza season. During the **2009-2010** influenza season**, 61.9%** of health care providers (HCP) received seasonal influenza vaccine. This is in contrast to historical levels of about 40%.
- **94.8%** of HCP who were vaccinated believed influenza vaccines to be safe, compared to only **66.2%** of the unvaccinated believing that the vaccine was safe.
- **98%** of HCP whose employers required vaccination were vaccinated, in comparison with **58.3%** who did not have an employer requirement.

For more details, see M*orbidity and Mortality Weekly Report (*MMWR), August 19, 2011
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6032a1.htm?s_cid=mm6032a1_w

Prevention and Control of Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2011

The Centers for Disease Control and Prevention (CDC) has published its annual recommendations on influenza vaccination in the MMWR, August 26, 2011. . http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6033a3.htm?s_cid=mm6033a3_w

- Most influenza vaccine recommendations from last year stay the same, and can be found at the 2010 ACIP statement on prevention and control of influenza with vaccines (MMWR Aug 6, 2010 http://www.cdc.gov/mmwr/pdf/rr/rr5908.pdf) and in an update on CSL influenza vaccine (MMWR Aug. 13, 2010 http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5931a4.htm?s_cid=mm5931a4_w)
- Vaccine strains for 2011-2012 are identical with those contained in 2010-2011 vaccine.
- **Annual vaccination for everyone ≥ 6 months old** is still recommended in order to have optimal protection against influenza. This is because it is impossible to determine on an individual basis which vaccine recipients from last year have waning immunity.
- Providers should offer vaccine **as soon as it becomes available**, and continue to offer vaccine throughout the influenza season.
- Vaccine dosing is age dependent**.**
    - **Adults and children 9 years** and above need only one dose of vaccine.
    - For this influenza season, children up through 8 years of age who received one or more doses of seasonal influenza vaccine during the 2010-2011 season only need one dose of 2011-2012 seasonal vaccine (since strains have not changed).
    - Children aged 6 months-8 years who have never had seasonal influenza vaccine need two doses of influenza vaccine at least 4 weeks apart *during their first season of vaccination* to optimize immune response.
    - Children aged 6 months-8 years whose seasonal influenza vaccine history is unknown should be assumed not to have received vaccine in the 2010-2011 season and will need two doses of influenza vaccine at least 4 weeks apart.
- There are a variety of influenza vaccine formulations
    - Trivalent influenza vaccines (TIV) are given as shots
        - *Intramuscular* injection is required for almost influenza shots.
        - The one exemption is a new TIV formulation by Sanofi Pasteur named Fluzone Intradermal which is licensed for adults ages 18-64 years old and should be given by the **intradermal** route.
    - Fluzone High-Dose (Sanofi Pasteur) is a TIV with four times the antigen content of other adult TIV. It is licensed for persons aged ≥65 years old.
        - CDC indicates *no preference* for Fluzone High-Dose versus other TIV preparations.
    - The intranasally administered live attenuated influenza vaccine (LAIV) FluMist (MedImmune) can be given to healthy, nonpregnant persons aged 2 through 49 years.
        - Within the indicated groups specified for each vaccine in the package inserts, CDC indicates *no preference* for LAIV versus TIV.

Prevention and Control of Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2011 (cont.)

- New Recommendations for Egg-Allergic People.
    - A prior severe allergic reaction to influenza vaccine, regardless of the component suspected to be responsible for the reaction, is still a contraindication to receipt of influenza vaccine.
    - Egg allergy alone is no longer considered a contraindication to influenza vaccine.
        - Persons who have experienced only hives following egg exposure should receive influenza vaccine, but should receive TIV (not LAIV). The vaccine should be administered by a health-care provider who is familiar with the potential manifestations of egg allergy. Vaccine recipients should be observed for at least 30 minutes after vaccination for signs of a reaction.
        - Persons who have severe reactions to egg (examples are hypotension, respiratory distress, recurrent emesis, angioedema, lightheadedness, or who required epinephrine or other emergency medical intervention, especially soon after vaccination) are more likely to have a serious systemic or anaphylactic reaction upon re-exposure to egg proteins. Before these people receive influenza vaccine they should be referred to a physician with expertise in the management of allergic conditions for further risk assessment.

For more information on CDC's influenza vaccine recommendations, see MMWR, Early Release, August 18, 2011. http://www.cdc.gov/mmwr/pdf/wk/mm60e0818.pdf

Influenza Vaccination among US Pregnant Women

- All pregnant women need an annual influenza shot (TIV) regardless of the trimester of their pregnancy.
- In the 2010-2011 season, **49%** of pregnant women received influenza vaccine. This is similar to the coverage in the 2009-2010 season, and much higher than the historical level of about **15%**.
- Women were almost 5 times more likely to get an influenza vaccine if it was recommended by her health care provider.
- Infants < 6 months old who are too young to be vaccinated can be protected from influenza by having families and caretakers receive influenza vaccine.

For more details, see MMWR August 19, 2011
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6032a2.htm?s_cid=mm6032a2_w

LITERATURE ON INFLUENZA AND INFLUENZA VACCINE

Obesity Increases Risk of Hospitalization for Influenza

- Severely obese individuals with and without chronic conditions are at increased risk for respiratory hospitalizations during influenza seasons.
- Obese patients should be considered a priority group for preventive influenza measures, such as vaccination and treatment with antiviral medications.

See *Clinical Infectious Diseases*, Sept. 1, 2011
http://cid.oxfordjournals.org/content/53/5/413.full.pdf+html?etoc

Influenza Vaccination of School Children Decreases Absenteeism

- A universal influenza vaccination of school children was started in Japan in the 1960s, but abandoned in 1994.
- Analysis of the time periods with and without universal influenza vaccination shows that universal vaccination of school children was effective in reducing absenteeism and the number of class cancellation days.

For the abstract, see *Clinical Infectious Diseases, July 15, 2011 at*
http://cid.oxfordjournals.org/content/53/2/130.abstract?etoc

NEWS ON VACCINES AND VACCINE PREVENTABLE DISEASES

Provisional ACIP Recommendations for Tdap Vaccine in Pregnant Women

- On June 22, 2011, the Advisory Committee on Immunization Practices (ACIP) of the Centers for Disease Control and Prevention (CDC) recommended that all pregnant women who have not previously received Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis Vaccine (Tdap) should be vaccinated during pregnancy, preferably during the third or late second trimester (after 20 weeks gestation).
- If pregnant women without a previous Tdap are not immunized during pregnancy, they should receive Tdap immediately post partum.
- Adolescents and adults who have or expect to have close contact with an infant aged less than 12 months and who previously have not received Tdap should receive a single dose of Tdap.

For more details, see
http://www.cdc.gov/vaccines/recs/provisional/downloads/pregnant-Tdap-use.pdf

New Law that Authorizes Arizona Pharmacists to Administer Vaccines to Children 6 Years-17 Years Old

- Senate Bill 1298 amended Arizona Revised Statutes to allow for certified pharmacists to administer vaccines to children 6-17 years old
  - Influenza vaccines will be able to be given to these children without a prescription, as well as vaccines that are part of a state of emergency.
  - For all other vaccines given to children, a pharmacist will be required to get a prescription to vaccinate children.
- Certified pharmacists have been authorized to give most CDC recommended vaccines to adults 18 years and older since 2009.
- The Pharmacy Board is in the process of writing rules to accompany this new legislation. The rules may be ready by early 2012.

New CDC Meningococcal Vaccine Recommendations

A variety of new meningococcal vaccines recommendations have been made by CDC over the last year. These are summarized below to help put them in perspective.

Timeline for New Meningococcal Vaccine Recommendations	
Oct. 2010	ACIP votes for adolescents to receive a 2nd quadrivalent meningococcal conjugate vaccine (MCV4) booster dose
Jan 28, 2011 MMWR	Publishing of Updated ACIP Recommendations for Meningococcal Vaccines • 2nd MCV4 booster in adolescents • 2-dose MCV4 series needed for certain high risk individuals 2-55 years old. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6003a3.htm?s_cid=mm6003a3_w
Jan 28, 2011 MMWR amended July 29, 2011 MMWR	Publishing of "General Recommendations on Immunization" • Page 10: "All brands of …quadrivalent meningococcal conjugate vaccines are interchangeable within their respective series." http://www.cdc.gov/mmwr/pdf/rr/rr6002.pdf • The above statement was later amended in the July 29, 2011 MMWR with a footnote that says "Only if necessary, based on vaccine availability." http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6029a7.htm?s_cid=mm6029a7_w
June 22, 2011	ACIP votes to expand age range of MCV4 in high risk infants to include ages 9-23 months.
June 22, 2011	Vaccine for Children (VFC) Resolution • Lowering the age of MCV4 down to 9 months of age for high risk infants. • Children 9-23 months need 2 doses of MCV4 at least 3 months apart. http://www.cdc.gov/vaccines/programs/vfc/downloads/resolutions/06-11mening-mcv.pdf
July 29, 2011 MMWR	Errata for the "General Recommendations on Immunizations" published on January 28, 2011 MMWR. Two of the errata deal with MCV4: • Clarification of interchangeability recommendation • Deferring diphtheria containing vaccines (including MCV4) for at least 10 years if there is an Arthrus reaction http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6029a7.htm?s_cid=mm6029a7_w
Aug 5, 2011 MMWR	Document reviewing MCV4 licensure for children aged 2-10 years, and updating guidance for MCV4 booster dose for adolescents and other persons at increased risk for meningococcal disease. • Discussion of MCV4 immunogenicity • *Either* of the two MCV4 formulations is preferred over quadrivalent meningococcal *polysaccharide* vaccine. • The 2nd MCV4 booster dose should be given, regardless of the vaccine brand used for the previous dose or doses. • Absence of a reference to the June 22, 2011 ACIP vote to decrease the lower age of MCV4 to 9 months. This likely is a reflection of the time delay in getting new recommendations to publication. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6030a3.htm?s_cid=mm6030a3_w
• ACIP recommendations become official CDC policy when they are published in the MMWR. • There are two quadrivalent meningococcal conjugate vaccines (MCV4): Menactra® (Sanofi Pasteur) and Menveo® (Novartis).	

LITERATURE ON VACCINES AND VACCINE PREVENTABLE-DISEASES

Fatal Poliovirus Infection Reported 12 Years after Exposure to Oral Vaccine

- A woman with common variable immunodeficiency who regularly received intravenous immune globulin (IVIG) treatment became paralyzed with type 2 poliovirus and died 12 years after her child received the oral polio vaccine.
- Investigators postulate that her paralytic disease may have been due to recently switching to a different preparation of IVIG that may have had low antibody titers for type 2 poliovirus, allowing for progression of disease.
- The risk of vaccine-associated paralytic poliomyelitis in persons with primary B-cell immunodeficiency is estimated to be increased by a factor of 3000 after exposure to the oral poliovirus vaccine.
- The oral vaccine is contraindicated in persons with immunodeficiencies and in their household members. Oral polio vaccine was discontinued in the US in 2000, but is still used in many parts of the world.
- Vaccine-derived polio virus (VDPV) cases are an additional challenge to the eradication of polio. Persons with chronic VDPV infection represent a potential persistent reservoir that could lead to the reintroduction of poliovirus.

See the *New England Journal of Medicine*, June 16, 2011 for a preview of the report (see p. 2316) http://www.nejm.org/toc/nejm/364/24 and the full text of the accompanying editorial (p. 2273) at http://www.nejm.org/doi/full/10.1056/NEJMp1104329

Varicella Vaccine Leads to Near Elimination of Varicella Deaths in the US

- Varicella immunization was first licensed in the US in 1995.
- Before varicella vaccine licensure (1990-1994), there was an average of 105 deaths a year from varicella in the US. In contrast, by 2007, there were only 14 deaths from varicella, representing an 88% decrease in mortality rate.
- The decline in deaths occurred in all age groups, with the greatest decline among children and adolescents younger than 20 years (97%) and among those younger than 50 years overall (96%).

For more details, see the August 2011 issue of *Pediatrics* at:
http://pediatrics.aappublications.org/content/128/2/214.full.pdf+html

Human Papilloma Virus (HPV) Linked to Oral Cancer

- Oral and pharyngeal squamous cell carcinomas traditionally have been associated with tobacco and alcohol use.
- Results from recent studies suggest that some of these cancers, primarily those of the oropharynx (especially those of the base of the tongue and the tonsils), are associated with infection with high-risk HPV types.

For more details, see *Journal of the American Dental Association*, August 2011
http://jada.ada.org/content/142/8/915.full.pdf+html

Historical Perspective on Vaccines

- Dr. Stanley Plotkin is a leading authority on vaccines whose accomplishments include the development of the rubella vaccine in the 1960s. A few years ago, Dr. Plotkin authored a historical review of vaccines entitled “Vaccines: past, present and future.”
- For Dr. Plotkin’s article, see *Nature Medicine* online at http://www.nature.com/nm/journal/v11/n4s/full/nm1209.html.

VACCINE RESOURCES

Measles Vaccine Guidance in Light of Recent US Outbreaks

- The U.S. is currently seeing the largest number of measles cases in 15 years, with 156 confirmed cases reported between January 1 and June 17, 2011.
- Most of these cases (136) were associated with importations from measles-endemic countries or countries where large outbreaks are occurring, primarily countries in Europe, Africa, and Asia.
- The Immunization Action Coalition's July 2011 issue of *Vaccinate Adults* is primarily devoted to measles and measles vaccine information in order to give healthcare professionals information that they need to respond to measles outbreaks across the U.S.

For the July 2011 issue of *Vaccinate Adults*, see:
http://www.immunize.org/va/va32.pdf?utm_source=Vaccinate+Adults+Announcement&utm_campaign=28da2c9e0e-January_2011_Issue_of_Vaccinate_Adults1_12_2011&utm_medium=email

Errata in MMWR General Recommendations on Immunizations from January 28, 2011

Four errata to *CDC's* "General Recommendations on Immunization" (MMWR January 28, 2011, http://www.cdc.gov/mmwr/pdf/rr/rr6002.pdf) have been published (MMWR July 29, 2011, http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6029a7.htm)

1. Quadrivalent meningococcal conjugate vaccines are interchangeable within their respective series, **only if necessary, based on vaccine availability.**

2. Live oral typhoid vaccine (Ty21a) should not be administered to persons receiving antibacterial drugs until **72 hours** after the last dose of antimicrobial, to prevent the antibiotic from making the vaccine less effective
    - The reason for the correction: The original time to wait after antibiotics to give the live oral typhoid was incorrectly published as 24 hours.
    - Note the additional correct statement that after the live oral typhoid vaccine is administered, if feasible "antibacterial drugs should not be started or resumed until 1 week after the last dose of Ty21a."

3. If there is a history of arthus-type hypersensitivity reactions after a previous dose of tetanus **or diphtheria-toxoid containing vaccines (including MCV4),** then defer vaccination until at least 10 years have elapsed since the last tetanus toxoid-containing vaccine."
    - The reason for the correction: Dipththeria-toxoid containing vaccines including MCV4 was not mentioned in the 1/28/11 MMWR.

4. MMR, **LAIV**, and varicella vaccines can be administered on the same day.
    - The reason for the correction: The 1/28/2011 MMWR did not mention LAIV as being able to be co-administered with MMR and varicella vaccines.

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